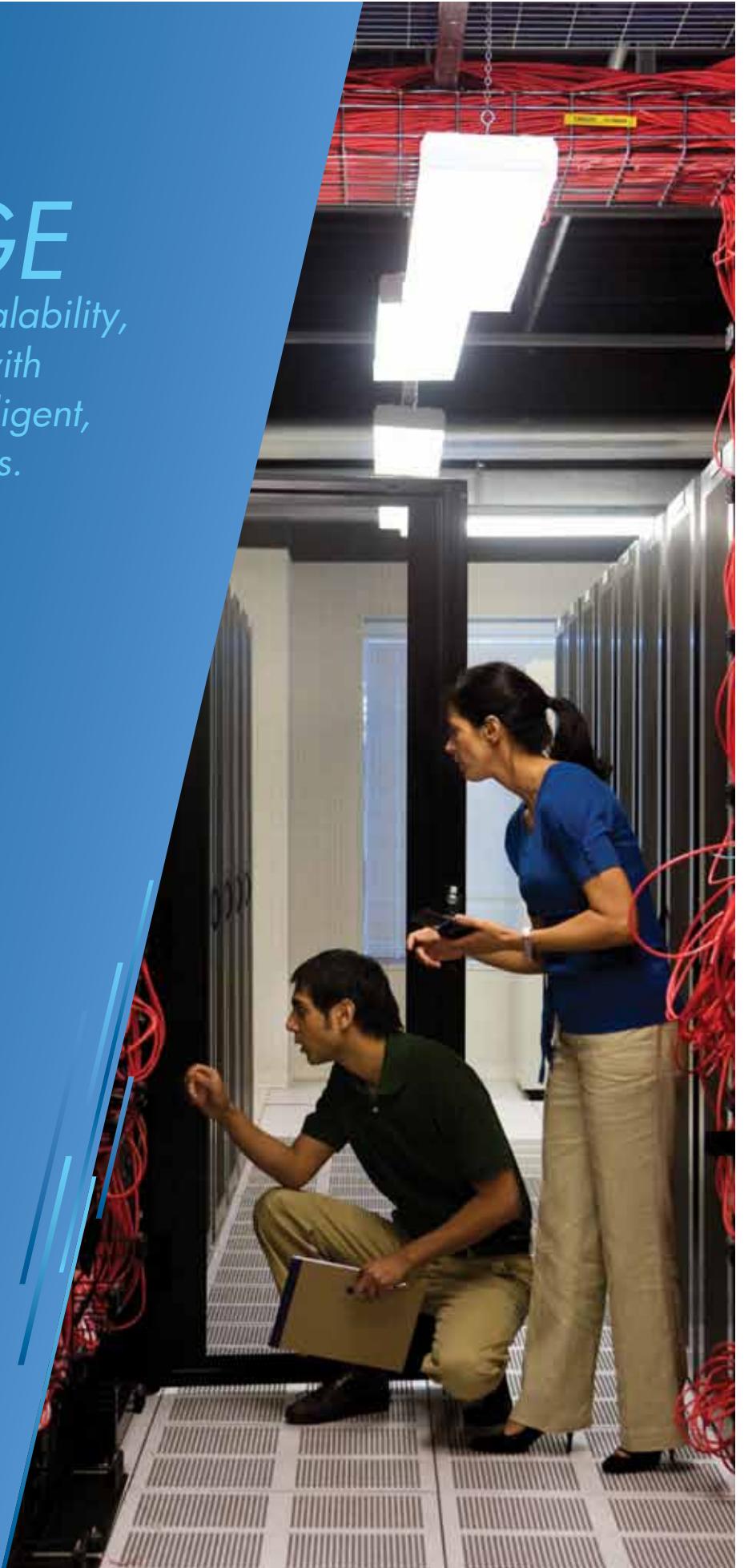


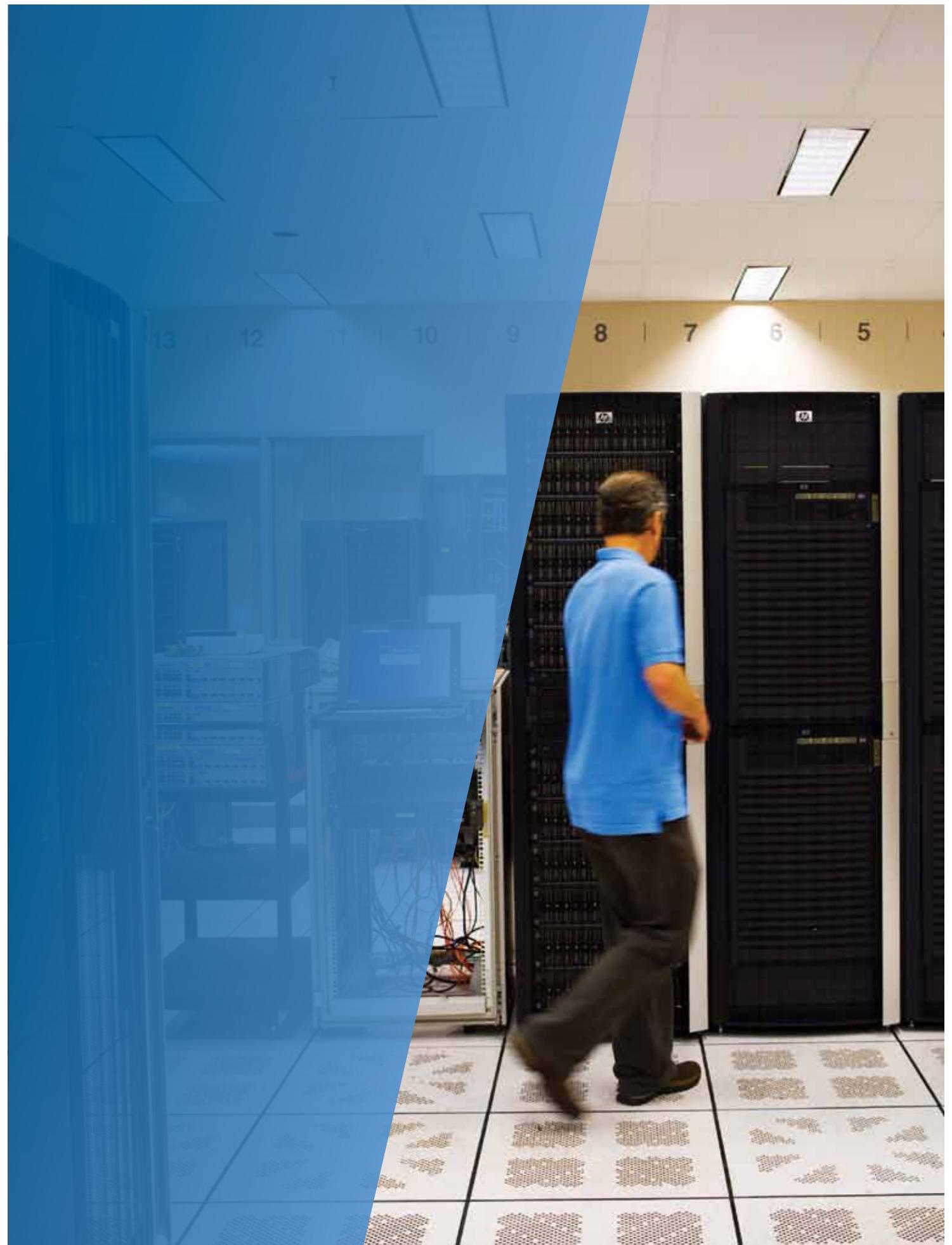
# CHANGE

*network security, scalability,  
flexibility, and ROI with  
award-winning, intelligent,  
and versatile switches.*

## HP 5400 and 3500 Switch Series

Brochure







The chassis-based HP 5400 Switch Series and stackable 3500 series are next-generation Layer 3/4 intelligent switches, offering unprecedented adaptive intelligence, versatility, and operational excellence to meet current and future networking demands.

All the members of the 5400 and 3500 Switch Series are built on the ProVision ASIC, the newest ASIC innovation developed by HP Labs. The ProVision ASIC gives the 5400 and 3500 Switch Series wire-speed policy enforcement, resiliency, ASIC programmability, and high-level integration.

The 5400 and 3500 Switch Series offer unparalleled adaptability. The 5400 and 3500 series provides for future-proof flexibility with available versatile intelligent ports, combining the capabilities of the ProVision ASIC with the unparalleled performance of 10/100/1000 ports and integrated Power over Ethernet (PoE and PoE+); thereby setting a new standard for versatility and scalability. The HP 5400 Switch Series chassis and stackable 3500 series can provide from 24 to 288 10/100/1000 PoE ports per switch, with identical features, performance, and lifetime warranty.<sup>1</sup>

In addition, these new intelligent switches deliver enhanced efficiency, ease of management, and investment protection. These switches are highly energy efficient and offer up to 45 percent energy cost

savings according to Miercom ([www.miercom.com](http://www.miercom.com)), an independent test lab. With v2 zl Modules and bundles, HP is further pushing innovation in the platform. These modules are 20 percent to 40 percent<sup>2</sup> more energy efficient than first-generation modules, support Energy Efficient Ethernet (EEE) (802.1ae), offer 10GBase-T connectivity, and double the 10G density to scale up to 96 ports per chassis.

## Responding to real-world needs

Enterprise businesses are demanding more from their networking infrastructures. Specifically, today's organizations need to protect their information assets; support an increasingly mobile workforce; and allow for online collaboration and distributed computing capabilities. Also, they need to integrate control or bandwidth-intensive applications such as Voice over IP (VoIP), Voice over Wireless LAN (VoWLAN), and video streaming and prepare for future technologies with a highly scalable and flexible infrastructure.

<sup>1</sup> Hardware warranty replacement for as long as you own the product, with next business day advance replacement (available in most countries) with a five-year hardware warranty replacement for the disk drive included with HP AllianceONE Services zl Module, HP Threat Management Services zl Module, HP PCM+ Agent with AllianceONE Services zl Module, and HP MSM765 zl Mobility Controller. For details, refer to the HP Software License, Warranty, and Support booklet at <http://www.hp.com/networking/warranty>.

<sup>2</sup> Source: Miercom Lab Testing Summary Report, December 2008

Intelligence	Versatility	Operational excellence
<ul style="list-style-type: none"> <li>• More granular security and QoS policies</li> <li>• Sophisticated control at wire speed</li> <li>• Closer alignment with applications for security, convergence, and mobility</li> <li>• Consistent user experience</li> </ul>	<ul style="list-style-type: none"> <li>• Available, multiple, and versatile choices in port selection with true modularity</li> <li>• Future-proofing</li> <li>• Operational flexibility—applicable in a variety of core or edge-use models</li> <li>• Scalable, upgradable switch family</li> </ul>	<ul style="list-style-type: none"> <li>• Plug-and-play solutions</li> <li>• Investment protection—truly scalable and upgradable modules for additional functionality</li> <li>• Greater efficiency in deployment, operation, and maintenance</li> <li>• Increased productivity</li> <li>• Highly energy efficient</li> </ul>

The vision and architecture of HP for delivering on these needs is the HP Adaptive Network Architecture, which places control of the network at the edge, closest to the users—and the best location for enforcing network policies. Controlling traffic at this level requires switches with truly adaptive intelligence. It also requires levels of versatility and operational excellence that go well beyond the norms of the past.

The 5400 and 3500 Switch Series provide a rich set of platform and software features that make them well suited for enterprise edge, distribution/aggregation layer, and small core deployments. Bringing these features together under a common ASIC architecture, unified software, and a unified set of easy-to-use management tools means that the 5400 and 3500 Switch Series deliver unparalleled flexibility along with lower total cost of ownership and ongoing management costs.

## HP 5400 and 3500 Switch Series

The HP 5400 and 3500 Switch Series deliver intelligence, versatility, and operational excellence. The members of this family of intelligent switches share a number of important features, including the following:

- **Unified Adaptive Network Architecture:** The Unified Adaptive Network Architecture offers industry-leading scalability and features in unified software applications, wired and wireless management infrastructure. The 5400 and 3500 Switch Series provide the intelligent switching technology needed for security control and authentication, bandwidth

shaping, data prioritization, advanced routing, WLAN management, and deep-packet inspection—in short, true control of your network.

• **ProVision ASIC:** The latest, in-house ProVision ASIC designed by HP delivers high-end, wire-speed capabilities and intelligence to the 5400 and 3500 Switch Series. The ProVision ASIC integrates sophisticated switching functionality in a single, high-reliability, and high-performance chip. With the HP Identity Driven Manager (IDM) software that provides automated access control with improved security, the new 5400 and 3500 Switch Series offer the ability to enforce per user policies at wire speed enhancing the capabilities of the Adaptive Network Architecture. The new v2 zl modules built with second generation advanced ASICs continue the HP winning streak of delivering significant technology improvements. The v2 zl modules deliver double the 10G density while reducing power consumption by 20–30 percent,<sup>3</sup> together with hardware support for advanced capabilities such as Virtual Routing and Forwarding (VRF) lite, policy-based routing (PBR), and better buffering.

• **Scalability and versatility:** Based on the same ProVision ASIC architecture and common software feature set, the 5400 and 3500 Switch Series products can provide from 24 to 288 10/100 Gigabit PoE ports per switch, allowing them to be deployed in a wide variety of network environments.

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<sup>3</sup> Source: Miercom Lab Testing Summary Report, December 2008

- HP AllianceONE integrated:** The HP 5400 Switch Series provide a high-performance, enhanced security switch platform for deploying proven business and network applications and services within the network. Hosted on the HP AllianceONE Services zl Module, these applications and services can act on traffic locally, distributed throughout the network, or consolidated in a central location. That makes management easier and offers additional capabilities to adjust or improve network behavior (such as load balancing). HP AllianceONE allows user to manage costs and use space and power more efficiently. The HP AllianceONE allows for delivery of tested and certified package, building end user confidence.
- Comprehensive software features:** The 5400 Switch Series come with advanced networking Layer 2/3 protocols and features

(for example: OSPF v2/v3, PIM, VRRP, and QinQ) uniquely suited for large-scale distribution solutions. Since features are built into the chassis, no expensive license upgrades are required to realize support for advanced capabilities.

## A wide spectrum of switch offerings

Thanks to their versatility, the HP 5400 and 3500 Switch Series can be deployed in a wide range of network designs. Unique platform form-factor attributes—chassis-based and stackable—make each Switch Series ideally suited for specific deployments and requirements. When selecting the right platform, customers should consider the dimensions, density, interface flexibility, expandability, and level of hardware redundancy appropriate for their deployment. Important features are highlighted in the following table.

**Table 1:**  
Summary of switch features

HP Switch	5406 zl	5412 zl	3500 yl-24G-PWR 3500 yl-48G-PWR	3500 yl-24G-PoE+ 3500 yl-48G-PoE+	3500-24-PoE 3500-48-PoE	3500-24 3500-48
Form factor	Chassis	Chassis	Stackable	Stackable	Stackable	Stackable
Height (rack unit)	4U	7U	1U	1U	1U	1U
10/100 ports with PoE	Up to 144	Up to 288	—	—	24 <sup>4</sup> /48 <sup>4</sup>	24 <sup>4</sup> /48 <sup>4</sup>
10/100/1000 ports with PoE	Up to 144	Up to 288	24 <sup>4</sup> /48 <sup>4</sup>	24 <sup>4</sup> /48 <sup>4</sup>	—	—
Mini-GBIC	Up to 144	Up to 288	Up to 4 <sup>4</sup>	Up to 4 <sup>4</sup>	Up to 4 <sup>4</sup>	Up to 4 <sup>4</sup>
10GbE ports	Up to 48	Up to 96	4 (with optional module)	4 (with optional module)	None	None
Open module slots	6	12	None	None	None	None
Power for PoE	Supports PoE+ Internal: up to 1800 W With power shelf: up to 3600 W	Supports PoE+ Internal: up to 3600 W With power shelf: up to 5400 W	Internal = 398 W External = 398 W with HP 620 Total = 796 W	Supports PoE+ Internal = 398 W External = 398 W with HP 630 Total = 796 W	Internal = 398 W External = 398 W with HP 620 Total = 796 W	None
Performance (Mbps)	292.8 <sup>6</sup>	585.6 <sup>7</sup>	75.7/111.5	75.7/111.5	8.9/12.5	8.9/12.5
Power redundancy	System: use 2 (full) internal supplies PoE: N+1 and full possible <sup>5</sup>	System: use 3 (N+1) or 4 (full) internal supplies PoE: N+1 and full possible <sup>5</sup>	System: use HP 620 PoE: 398 W; N+1 with HP 620	System: use HP 630 or 630 for RPS PoE: 398 W; N+1 with HP 630	System: use HP 620 for RPS PoE: 398 W; N+1 with HP 620	System: use HP 620 PoE: NA
Hot-swappable	All modules	All modules	Not available	Not available	Not available	Not available
Removable management module	Yes	Yes	Not available	Not available	Not available	Not available
Removable fan tray	Yes (hot-swap)	Yes (hot-swap)	Yes	Yes	Yes	Yes

<sup>4</sup> Includes dual-personality ports

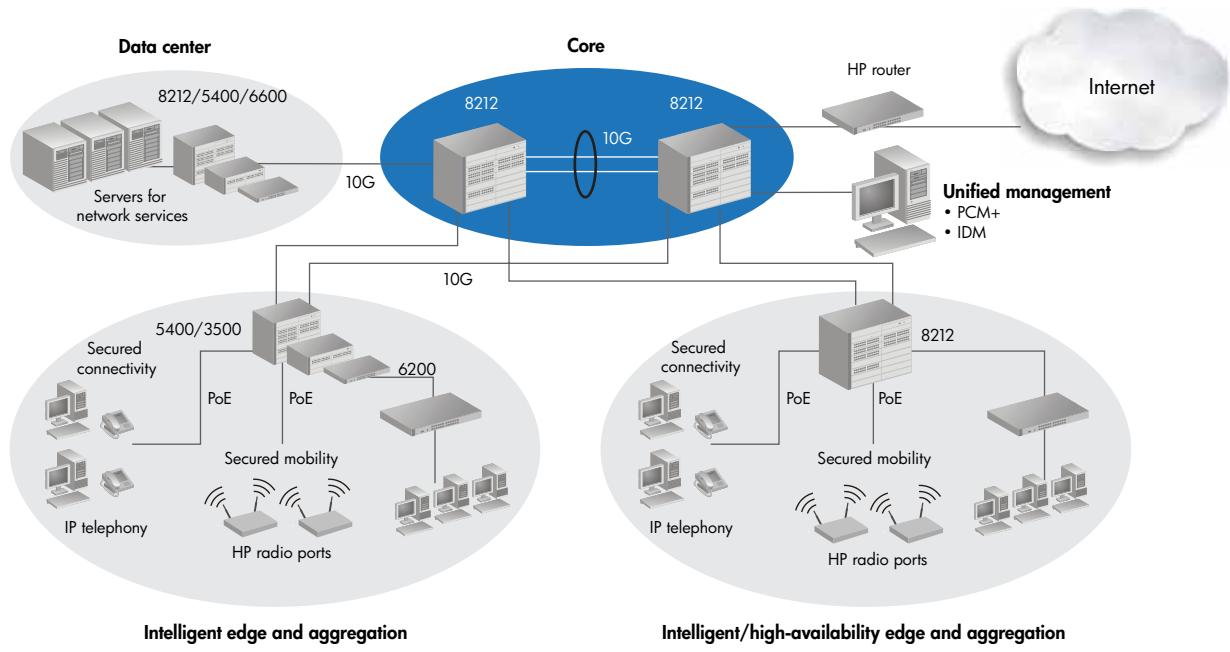
<sup>5</sup> See 5400/3500 Ordering Guide for more details

<sup>6</sup> Requires v2 zl modules. With generation 1 zl modules, it is 240.2 Mpps

<sup>7</sup> Requires v2 zl modules. With generation 1 zl modules, it is 480.3 Mpps

**Figure 1:**

Summary of the wide range of use models for HP 5400 and 3500 Switch Series.



- **Advanced management and monitoring tools:** These include innovative Remote Intelligent Mirroring, Remote Network Monitoring (RMON), Extended RMON (XRMON), and sFlow on every port.
- **Choice of Connectivity:** These switches offer a choice of 10G, 10/100/1000, 10/100 PoE+ and Non-PoE connectivity options. 10/100/1000 and 10/100 copper ports with PoE+ capability support advanced converged devices and enable granular power control. The introduction of new 10GBase-T module for 10G connectivity on the 5400 and the 8200 series chassis enables medium distance connectivity (up to 100 meters) with standard RJ45 cabling, and helps leverage existing infrastructure without costly transceivers.
- **10GbE expandability:** The new switches' 10GbE expandability supports bandwidth-intensive applications such as video streaming and distribution layer link aggregation, providing deployment flexibility, and investment protection for future needs.

- **Energy efficiency:** Switches in this family offer up to 45 percent cost savings in energy consumption compared to the industry average, according to Miercom. In addition, these switches offer features including per-slot power management, intelligent PHY power management, LED power-save on mode, and dynamic PoE power allocation to intelligently conserve power consumption based on utilization. In addition, through Professional Management Center Plus, power to the end point PoE devices can be regulated. For example, in a locked conference room during off business hours, VoIP phones can be scheduled to be turned off to save power.
- The new v2 zl modules enable 20–40 percent<sup>8</sup> energy savings depending upon the module compared to equivalent generation 1 modules. In addition, the Gigabit ports in v2 zl modules offer industry's first Energy Efficient Ethernet Solution.

<sup>8</sup> Source: Miercom Lab Testing Summary Report, December 2008

## ProVision ASIC confers security, convergence, and mobility benefits

The ProVision ASIC is a continuation of HP ASIC innovation over the past many years starting with the HP AdvanceStack Switch 2000 and continuing through the HP 5300xl Switch Series and now the 5400 and 3500 series.

The raw performance of the ProVision ASIC architecture beats most competition while delivering unparalleled intelligence at the port.

More specifically, the ProVision ASIC offers the following benefits:

**Wire-speed policy enforcement engine**—The ProVision ASIC enables users to deploy more secure and granular policy at wire speed across all ports for better protection of information assets and support for applications that

require bandwidth and QoS control. The ProVision ASIC's policy engine is superior due to implementation of a multi-stage classifier and Ternary Content Addressable Memory (TCAM). The multi-stage classifier allows the traffic to be processed efficiently, and the ProVision ASIC's TCAM can match more policy rules simultaneously at wire speed than competitive offerings in this class. This capability results in more granular and better performing policy enforcement.

**Built-in resiliency**—The ProVision ASIC is architected to operate continuously and withstand error conditions and malicious network attacks. The 5400 and 3500 Switch Series use a combination of software and ProVision ASIC functionality to verify whether all the data packets are sent to the CPU. Excessive packets from malicious attacks or network misconfiguration can be identified and demoted to lower-priority queues before they overwhelm and shut down the CPU and the switch.

**Table 2:**  
Support for network applications

The HP 5400 and 3500 Switch Series excel at supporting applications in three main areas:		
<b>Security</b> In today's environment, security is a top concern for all network managers. The HP 5400 and 3500 Switch Series help with security in a number of ways, including the following: <ul style="list-style-type: none"><li>• Granular per-user policy enforcement with wire-speed packet processing and selection for Remote Intelligent Mirroring, ACLs, QoS, rate limiting, and other features</li><li>• Mitigation of malicious attacks through Virus Throttle, ICMP throttling, CPU DoS protection, and detection of malicious attacks</li><li>• Secure network access with IEEE 802.1X, Web/MAC authentication, identity-driven and per-port ACLs, MAC-based VLAN, protection for network with DHCP protection, BPDU port protection, port protection, Dynamic ARP protection, Dynamic IP lockdown, and STP Root Guard</li><li>• Secure network management via TACACS+, SSHv2, FTP, and encryption of all access methods—CLI, GUI, or MIB—through SSHv2, SSL, and SNMPv3</li><li>• Dynamic per-user policy, when integrated with HP Identity Driven Manager (IDM), the HP 5400/3500 Switch Series provides fast and effective means to set and enforce switch-level individual user policies (for example, ACL, QoS, and rate-limiting) automatically</li></ul>	<b>Convergence</b> Mainstream convergence applications such as IP telephony and video-over-IP are providing new and better ways for businesses to serve their customers, reduce cost, and increase productivity. But traffic from these applications place different requirements on the switch infrastructure. The HP 5400 and 3500 Switch Series offer the following features to help enable that converged traffic is delivered according to more stringent requirements: <ul style="list-style-type: none"><li>• Multicast support via data-driven IGMP, PIM Dense, and PIM Sparse<sup>9</sup></li><li>• Advanced QoS, including eight hardware priority queues and selectable queue configuration, set and enforce prioritization based on multiple match criteria such as Layer 2 (IEEE 802.1p, VLAN ID), Layer 3 (DSCP, IP address), and Layer 4 (TCP/UDP port) markings</li><li>• Bandwidth shaping by enforcing ingress/egress maximum and egress guaranteed minimum bandwidths</li><li>• Support for IP telephony through interoperability with industry-leading IP telephony vendors; LLDP-MED, which enables automatic configuration of QoS and VLAN; RADIUS VLAN, which uses standard RADIUS attributes to automatically configure VLAN for IP phones</li><li>• Support for jumbo frame, which improves the performance of Ethernet storage area network solutions using the iSCSI standard</li></ul>	<b>Mobility</b> The HP 5400 and 3500 Switch Series allow network managers to respond to users' increasing mobility with support for wireless LAN access points and to provide IEEE 802.3af and pre-standard PoE support. With the addition of the HP MSM765 zl Module, the HP 5400 Switch Series provides centralized wireless LAN configuration and management of advanced wireless services. This centralized approach to wired and wireless management streamlines device configuration and enables network monitoring and response to wired and wireless network threats, as well as administration of security and role-based user policies that are enforced at the edge of the network, regardless of how or where the user connects. <ul style="list-style-type: none"><li>• Layer 3 radio-port adoption supports network wide and auto-configuration of HP radio ports, enabling rapid deployment of a wireless LAN with minimal network reconfiguration</li><li>• Wireless mobility domain provides seamless client network connectivity as mobile users roam across subnet boundaries</li><li>• Robust guest account administration provides secure yet easy-to-implement browser-based network access for guest users</li><li>• Wireless LAN self-healing and RF interference avoidance provides network resiliency and sustainable wireless network availability</li></ul>
<small><sup>9</sup> Requires Premium License</small>		

In addition, the ProVision ASIC has built in processes that include end-to-end data checking, embedded RAM error correction, and ECC on an external DRAM. These processes enable the integrity of traffic as it passes through the switch, protecting traffic from environmental elements.

**Investment protection**—The ProVision ASIC confers investment protection through a programmable network processor feature that allows some future requirements to be accommodated. The network processor is based on patented technology from HP. New algorithms can be programmed into the ASIC to support new traffic classifications by inspecting deep into the data packets; this enables the HP switches based on ProVision ASIC to support applications and policy rules that do not yet exist.

**Higher reliability and lower TCO**—The ProVision ASIC integrates with components that are normally found on separate chips, such as the embedded processor, memory (for example, TCAM, input), packet classifier, MAC, and network processor. Because it is so highly integrated, the ProVision ASIC leads to a reduced number of components needed throughout the switch, which translates into increased reliability, lower power consumption, and lower TCO. It also means higher port density due to the smaller, overall form factor.

## Choice and scalability

The network applications are not homogeneous—and with their choice of 10/100, 10GbE, Gigabit, PoE, and PoE+ ports, the 5400 and 3500 Switch Series provide outstanding flexibility to right-size your network to support diverse applications and use models.

High availability is critical to enable customers to support uptime imperatives for their business while allowing them to reliably and seamlessly scale their network over time. The HP 5400 and 3500 Switch Series provide a wide range of platform high-availability features to meet these needs:

- Virtual Router Redundancy Protocol (VRRP), which allows groups of two routers to dynamically back each other up to create highly available routed environments
- HP Switch Meshing, which dynamically load balances across multiple active redundant links in a Layer 2 environment to increase available aggregate bandwidth
- Distributed trunking, which allows a switch or server to connect to two upstream switches with one logical trunk—increases resiliency and enables load sharing in enterprise networks and data centers





- IEEE 802.1ad QinQ<sup>9</sup>, which increases Ethernet's scalability and allows multiple LANs in different locations to be connected in a campus or metro network
- OSPF ECMP<sup>9</sup> (Equal Cost Multipath), which dynamically load balances across multiple, active, equal-cost paths in a Layer 3 environment
- IEEE 802.1s MSTP, which provides high link availability in multiple-VLAN environment
- IEEE 802.3ad LACP, which supports up to 60 trunks, each with up to 8 links (ports) per trunk; trunking across modules is also supported
- Hot-swappable modules, including the management module for the 5400 switch, and optional redundant power supplies (for the 5400 switch)
- Dual flash images and multiple configuration files
- Uni-Directional Link Detection (UDLD), which prevents network downtime from fiber link break

## Operational excellence

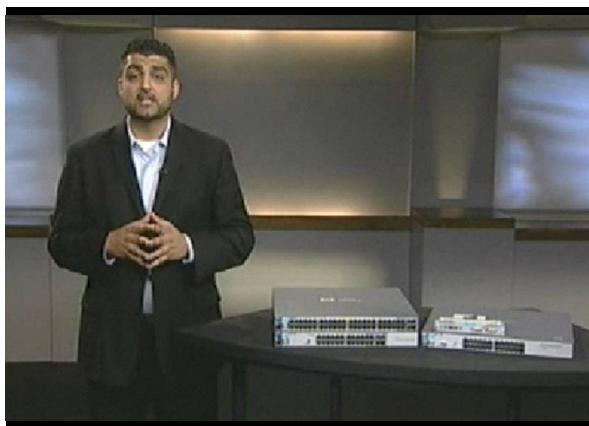
The ProVision ASIC and Versatile Intelligent Port allow plug-and-play solutions across the HP 5400 and 3500 Switch Series. The 5400 Switch Series also shares the same hardware module with the 8200 zl Switch Series.

Along with a comprehensive, unified set of configuration management tools, this capability yields efficiency in deployment, operation, and maintenance, which in turn leads to reduced costs and increased productivity.

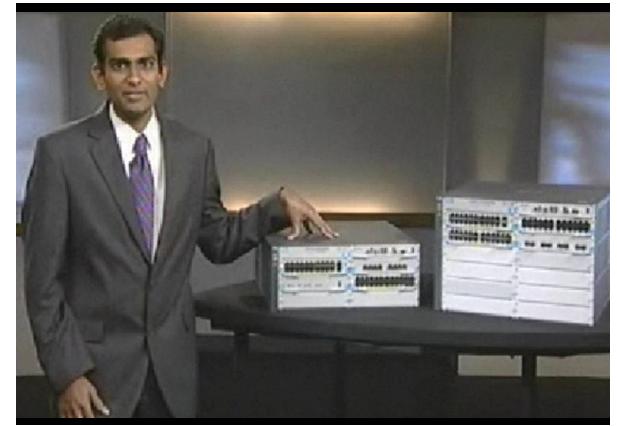
The Command Authorization and USB Autorun features in the 5400 and 3500 Switch Series also improve productivity in deploying, managing, and operating networks. These features allow less experienced or remote network managers to participate in installing and managing the switches.

Another important component of operational excellence is investment protection. All the 5400 and 3500 Switch Series support the next-generation Internet protocol—IPv6 host, IPv4/IPv6 dual stack, MLD snooping, ACL, QoS, and OSPF v3. To meet current and future IPv6 requirements, these switches have been certified with IPv6 Ready Logo Phase 2 from IPv6 Forum—a worldwide IPv6 advocacy consortium. The HP 5400 Switch Series has a removable management module (part of its chassis design) that adds investment protection for those switches. Finally, our industry-leading warranty and support policies help lower operation and maintenance costs, making the 5400 and 3500 Switch Series a wise long-term investment.

**Get a brief overview of the HP 3500 yl Switch Series here.**



**Watch this video to know more about the HP 5400 Switch Series.**



<sup>9</sup> Requires Premium License

## The next generation, now

The next-generation HP 5400 and 3500 Switch Series are built on the Adaptive Network Architecture (ANA), enhancing control of the network and providing increased intelligence, versatility, and operational excellence.

With their unified ProVision ASIC architecture, and single software image, new upgradable modules for the 5400 and the 8200 switches, such as the 10GBase-T for 10G medium distance (100 meters) connectivity, reduce the need for expensive transceivers; integrated, robust, and secure wired and wireless management platform; and a choice of integrating proven applications and solutions. Through HP AllianceONE, the HP 5400 and 3500 Switch Series offer unmatched value. Investments made today in these next-generation switches are likely to last well into the future.

### **Switch software:**

J8993A: Premium license for 3500 Switch Series

J8994A: Premium license for 5400 Switch Series  
(Required only for the following systems purchased:  
J8697A, J8698A, J8699A, J8700A, J9447A,  
and J9448A).

### **Interface modules:**

#### **1. 10GbE modules:**

J9538A: HP 8-port 10GbE SFP+ v2 zl Module

J9546A: HP 8-port 10GBase-T v2 zl Module

J9309A: HP 4-port 10GbE SFP+ zl Module

J9312A: HP 10GbE 2-port SFP+/2-port CX4 yl Module

J8707A: HP 4-port 10GbE X2 zl Module

J8708A: HP Switch zl 4-port 10GbE CX4 Module

#### **2. 10GbE/1GbE combination modules:**

J9536A: HP 20-port Gig-T PoE+/2-port 10GbE SFP+ v2 zl Module

J9548A: HP 20-port Gig-T/2-port 10GbE SFP+ v2 zl Module

#### **3. 1GbE modules:**

Rest of the stockkeeping units (SKUs) except those in the other three categories.

#### **4. 10/100 Modules**

J9547A: HP 24-port 10/100 PoE+ v2 zl Module

J9478A: HP 24-port 10/100 PoE+ zl Module

**Table 3:**

Available 5400 and 3500 Switch Series and bundles

J8692A: HP 3500 yl-24G-PWR Switch	1U stackable switch with 24 10/100/1000Base-T (including 4 dual-personality ports), PoE on all 10/100/1000, and optional 10GbE.
J8693A: HP 3500 yl-48G-PWR Switch	1U stackable switch with 48 10/100/1000Base-T (including 4 dual-personality ports), PoE on all 10/100/1000, and optional 10GbE.
J9310A: HP 3500 yl-24G-PoE+ Switch	1U stackable switch with 24 10/100/1000Base-T (including 4 dual-personality ports), PoE+ on all 10/100/1000, and optional 10GbE.
J9311A: HP 3500 yl-48G-PoE+ Switch	1U stackable switch with 48 10/100/1000Base-T (including 4 dual-personality ports), PoE+ on all 10/100/1000, and optional 10GbE.
J9470A: HP 3500-24 Switch	1U fixed-port switch with 20 10/100Base-T ports and 4 dual-personality 10/100/1000 ports for uplinks.
J9472A: HP 3500-48 Switch	1U fixed-port switch with 44 10/100 ports and 4 dual-personality 10/100/1000 ports for uplinks.
J9471A: HP 3500-24-PoE Switch	1U fixed-port switch with 20 10/100Base-T ports and 4 dual-personality 10/100/1000 ports for uplinks.
J9473A: HP 3500-48-PoE Switch	1U fixed-port switch with 44 10/100 ports, 4 dual-personality 10/100/1000 ports, and PoE on all 10/100/1000.
J9642A: HP 5406 zl Switch with Premium Software	4U modular chassis switch with a management module and 6 open slots. Power supplies must be ordered separately.
J8699A: HP 5406 zl-48G Switch Intelligent Edge	Chassis bundle with two 24-port 10/100/1000 PoE modules (48 ports total), one 875 W power supply in an HP 5406 chassis. Four open slots.
J9447A: HP 5406 zl-48G-PoE+ Switch	Chassis bundle with one 24-port 10/100/1000 PoE+ module, one 20-port 10/100/1000 PoE+ and 4-port mini-GBIC module, and one 1500 W PoE+ power supply in a HP 5406 6-slot chassis. Four open slots.
J9643A: HP 5412 zl Switch with Premium Software	7U modular chassis switch with a management module and 12 open slots. Power supplies must be ordered separately.
J8700A: HP 5412 zl-96G Switch Intelligent Edge	Chassis bundle with four 24-port 10/100/1000 PoE modules (96 ports total), two 875 W power supplies in an HP 5412 chassis. Eight open slots.
J9448A: HP 5412 zl-96G-PoE+ Switch	Chassis bundle with three 24-port 10/100/1000 PoE+ modules, one 20-port 10/100/1000 PoE+ and 4-port mini-GBIC module, and two 1500 W PoE+ power supplies in a HP 5412 12-slot chassis. Eight open slots.
J9533A: HP 5406-44G-PoE+/2XG-SFP+ v2 zl Switch with Premium Software	
J9532A: HP 5412-92G-PoE+/2XG-SFP+ v2 zl Switch with Premium Software	
J9539A: HP 5406-44G-PoE+/4G-SFP v2 zl Switch with Premium Software	
J9540A: HP 5412-92G-PoE+/4G-SFP v2 zl Switch with Premium Software	

J9307A: HP 24-port 10/100/1000 PoE+ zl Module  
J9308A: HP 20-port 10/100/1000 PoE+/4-port Mini-GBIC zl Module  
J9309A: HP 4-port 10GbE SFP+ zl Module  
J9478A: HP 24-port 10/100 PoE zl Module  
J8702A: HP 24-port 10/100/1000 PoE zl Module  
J8705A: HP 20-port Gig-T/4-port Mini-GBIC zl Module  
J8706A: HP 24-port Mini-GBIC zl Module  
J8707A: HP 4-port 10GbE X2 zl Module  
J8708A: HP 4-port 10GbE CX4 zl Module  
J8694A: HP 10GbE 2-port X2/2-port CX4 yl Module  
J9312A: HP 10GbE 2-port SFP+/2-port CX4 yl Module  
J9537A: HP 24-port SFP v2 zl Module  
J9535A: HP 20-port Gig-T PoE+/4-port SFP v2 zl Module  
J9534A: HP 24-port Gig-T PoE+ v2 zl Module  
J9536A: HP 20-port Gig-T PoE+/2-port 10GbE SFP+ v2 zl Module  
J9549A: HP 20-port Gig-T/4-port SFP v2 zl Module  
J9637A: HP 12-port Gig-T PoE+/12-port SFP v2 zl Module  
J9550A: HP 24-port Gig-T v2 zl Module

J9548A: HP 20-port Gig-T/2-port 10GbE SFP+ v2 zl Module  
J9538A: HP 8-port 10GbE SFP+ v2 zl Module  
J9546A: HP 8-port 10GBase-T v2 zl Module  
J9547A: HP 24-port 10/100 PoE+ v2 zl Module  
**Service modules:**  
J9289A: HP AllianceONE Services zl Module  
J9155A: HP Threat Management Services zl Module  
J9370A: HP MSM765 zl Mobility Controller  
J9051A: HP Wireless Edges Services al Module  
J9052A: HP Redundant Wireless Edge Services zl Module  
**Power:**  
J8713A: HP Switch zl 1500 W Power Supply  
J8712A: HP Switch zl 875 W Power Supply  
J9306A: HP 1500 W PoE+ zl Power Supply  
J8714A: HP Switch zl Power Supply Shelf/External Power Supply Shelf for zl Switches  
J8696A: HP 620 Redundant/External Power Supply for 3500 and 6200 yl Switches  
J9443A: HP 630 Redundant and/or External Power Supply



**Mini-GBICs/Transceivers/Direct attach cables:**

J9153A: HP 10G SFP+ LC ER Transceiver  
J9054B: HP 100-FX SFP-LC Transceiver  
J9099B: HP 100-BX-D SFP-LC Transceiver  
J9100B: HP 100-BX-U SFP-LC Transceiver  
J8177C: HP Gigabit 1000Base-T Mini-GBIC<sup>10</sup>  
J4858C: HP Gigabit-SX-LC Mini-GBIC  
J4859C: HP Gigabit-LX-LC Mini-GBIC  
J4860C: HP Gigabit-LH-LC Mini-GBIC  
J9142B: HP 1000-BX-D SFP-LC Mini-GBIC  
J9143B: HP 1000-BX-U SFP-LC Mini-GBIC  
J8436A: HP 10GbE X2-SC SR Optic  
J8437A: HP 10GbE X2-SC LR Optic  
J8438A: HP 10GbE X2-SC ER Optic  
J9144A: HP 10GbE X2-SC LRM Optic  
J8439A: HP 10GbE CX4 Media Converter  
J8440C: HP 10GbE X2-CX4 Transceiver  
J9150A: HP 10GbE SFP+ SR Transceiver

J9151A: HP 10GbE SFP+ LR Transceiver

J9152A: HP 10GbE SFP+ LRM Transceiver

J9281B: HP 10GbE SFP+ 1m Direct Attach Cable

J9283B: HP 10GbE SFP+ 3m Direct Attach Cable

J9285B: HP 10GbE SFP+ 7m Direct Attach Cable

J9300A: HP 10GbE XFP-SFP+ 1m Direct Attach Cable

J9301A: HP 10GbE XFP-SFP+ 3m Direct Attach Cable

J9302A: HP 10GbE XFP-SFP+ 5m Direct Attach Cable

**Management software:**

J9177A: HP Manager Plus 3.0 unlimited license

J9438A: HP Identity Driven Manager 3.0 base product (500-user license)

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<sup>10</sup>The J8177C is not supported in the J8692A, J8693A, J9470A, J9471A, J9472A, and J9473A.

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